

5/29/2018

Print



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	To
PO039927	ACI001-VC	12	1	Net 30	M4130NS.080	AISI 4130 Steel Sheet : MATERIAL: AISI 4130N STEEL SHEET AS PER OR AS PER AMS 6345 MIL-S- 18729 OR AMS 6350 OR AMS 6351				18	5/29/2018	18		S075399	Stock	5/29/2018	\$ 22.01 / sf	0		\$39
Total:										18		18								\$30

Plex 5/29/2018 1:01 PM Dart.Dubois.Pascal



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit
P0039927	ACI001-VC	1	1	Net 30	M1018R0.187	M1018R0.187 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108 receive ft				12	5/25/2018	12		S074039	Stock	5/24/2018	\$ 0.13 / ft
		2			M304R.313	304 SS Round bar .313 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft						12		S074040	Stock	5/24/2018	\$ 0.91 / ft
		3			M304R.500	304 SS roundbar .500 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				144		144		S074041	Stock	5/24/2018	\$ 2.33 / ft
		5			MT-4140-R1.625	AISI 4140 Round Bar MATERIAL: AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529				20		20		S074042	Stock	5/24/2018	\$ 10.29 / ft
		9			MT-1144-R0.500	1144 Steel Proof Round Bar 0.500"						24		S074043	Stock	5/24/2018	\$ 1.18 / ft
		11			M6061T6B0.375X1.000	6061T6 Bar .375 X 1.00 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft				40		40		S074044	Stock	5/24/2018	\$ 1.58 / ft
Total:										248		252					

Plex 5/24/2018 11:35 AM Dart.Dubois.Pascal



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039927**

Supplier: ACI001-VC
Acier Ouellette Inc.
935 Boul. Du Havre
Valleyfield
QC
J6S 5L1 Canada
Phone: 800 667 4248
Fax: 450 377 5696

PO No: PO039927

PO Date: 5/17/18

Due Date: 5/22/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

E-MAILED
MAY 17 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pynt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	M1018R0.187		M1018R0.187 : MATERIAL: AISI 1018- 1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108 receive ft	Firmed	5/22/18	12 ft	0 ft	12 ft	\$0.125833/ft	\$1.51
2	M304R.313		304 SS Round bar .313 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	5/22/18	12 ft	0 ft	12 ft	\$0.91/ft	\$10.92
3	M304R.500		304 SS roundbar .500 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	5/22/18	144 ft	0 ft	144 ft	\$2.3345/ft	\$336.17
Line Item Note 12 length of 12 ft										
4	M303R0.750		303 Round Bar 0.750 : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft	Firmed	5/31/18	12 ft	0 ft	12 ft	\$21.75/ft	\$261.00
5	MT-4140-B- 1.000X1.000		4140 Steel Bar 1.000 X 1.000 : AISI 4140N STEEL BAR PER MIL-S-5626, AMS 6382, AMS 6349, AMS 6529 receive ft	Firmed	5/31/18	24 ft	0 ft	24 ft	\$20.41666/ft	\$490.00

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	MT-4140-R1.625		AISI 4140 Round Bar MATERIAL: AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529	Firmed	5/22/18	20 ft	0 ft	20 ft	\$10.291/ft	\$205.82
7	MT-4140-R4.000	CUT TO 7" LENGHT	AISI 4140 Round Bar MATERIAL: AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529	Firmed	5/25/18	12 ft	0 ft	12 ft	\$90.69666/ft	\$1,088.36
Line Item Note 2 pcs of 6 ft										
8	MT-4140-S- 2.750X5.000		4140 Steel Sheet 2.750 X 5.000 : MAT'L: AISI 4140 / 4142 STEEL SHEET OR PLATE MINIMUM ROCKWELL C = 28 Rc MAXIMUM ROCKWELL C = 32 Rc ASTM A829, AMS 6395 receive ft	Firmed	5/22/18	12 ft	0 ft	12 ft	\$133.16666/ft	\$1,598.00
Line Item Note 2 pcs of 6 ft										
9	MT-4140-S- 1.250X2.000		AISI 4140 Steel Bar : MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE MINIMUM ROCKWELL C = 28 Rc MAXIMUM ROCKWELL C = 32 Rc ASTM A829, AMS 6395	Firmed	5/22/18	6 ft	0 ft	6 ft	\$35.8333/ft	\$215.00
10	MT-1144-R0.500		1144 Steel Proof Round Bar 0.500"	Firmed	5/22/18	20 ft	0 ft	20 ft	\$1.1755/ft	\$23.51
11	M303B1.000X2.000		303 Bar 1" X 2" : MATERIAL: AISI 303 SS BAR AS PER ASTM A582 NOTE: AISI 304/316 NOT ACCEPTABLE	Firmed	5/25/18	12 ft	0 ft	12 ft	\$38.91666/ft	\$467.00

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
12	M6061T6B0.375X1.000		6061T6 Bar .375 X 1.00 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	5/18/18	40 ft	0 ft 40'	40 ft	\$1.575/ft	\$63.00
13	M4130NS.080		AISI 4130 Steel Sheet : MATERIAL: AISI 4130N STEEL SHEET AS PER OR AS PER AMS 6345 MIL-S-18729 OR AMS 6350 OR AMS 6351	Firmed	5/22/18	18 sf	0 sf 18 1/2	18 sf	\$22.005555/sf	\$396.10
Line Item Note 1 PCS 3 FT X 6 FT										
14	MT-4140-S-2.250X3.000		AISI 4140 Steel Sheet 2.250" x 3.000" : MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE MINIMUM ROCKWELL C = 28 Rc MAXIMUM ROCKWELL C = 32 Rc ASTM A829, AMS 6395	Firmed	5/22/18	12 ft	0 ft	12 ft	\$74.3333/ft	\$892.00
Line Item Note 2 pcs of 6 ft										
15	MT-4140-S-0.375X4.500		AISI 4140 Steel Sheet/Plate MAT'L: AISI 4140 / 4142 STEEL SHEET OR PLATE MINIMUM ROCKWELL C = 28 Rc MAXIMUM ROCKWELL C = 32 Rc ASTM A829, AMS 6395	Firmed	5/30/18	12 ft	0 ft	12 ft	\$29.50/ft	\$354.00
Line Item Note 2 pcs of 6 ft										
Grand Total:									\$6,402.39	

Order Notes

Procurement Quality Clauses

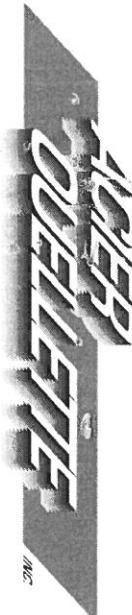
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 5/17/18 11:41 AM dart.lavoie.chantal



ACIER OUELLETTE INC.

935, Boul. du H vre
Salaberry de Valleyfield (Qu bec) J6S 5L1
T l.: 450-377-4248 Mtl.: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl.: 514-336-4246 Ext.: 866-456-4242

DELIVERY - CLIENT

CO00090245

Billed to

DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,
3 paquets.

Instruction F-M

Att : CHANTAL LAVOIE T l.: 613-632-5200

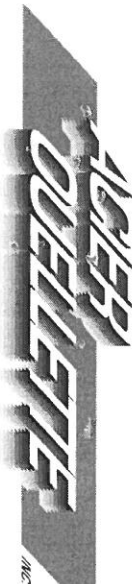
Delivery Route 5

Customer N  CLI0001056
Date 2018/05/17
Delivery date 2018/05/24
Your order N  P003990-1
Processed by Eric Kaehlert
Salesman
Carrier OUELLETTE VALLEYFIELD
Credit Terme Net 30 Days
Page 1

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
1 FLAT ALU 3/8 X 1 6061-T6 * FAL-381 2613 2 X 20'	18.00	40.00	PL \$CLB		25		40		DAS 11		MAY 24 2018
LINE#11 Heat : 386294											
2 ROUND CR 3/16 1018 (R) RCR-316 5327 1 X 12' R/L	1.13	12.00	PL \$CLB		12		12		DAS 11		MAY 24 2018
LINE#1 Heat : A33093-5.5											

NIR : R-109516-6

Next Page...



ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

DELIVERY - CLIENT

CO00090245

Billed to

DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

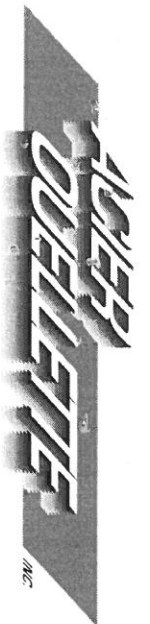
Delivery Route 5

Customer N° CL10001056
Date 2018/05/17
Delivery date **2018/05/24**
Your order N°
Processed by Eric Kaehliert
Salesman
Carrier OUELLETTE VALLEYFIELD
Credit Terme Net 30 Days
Page 2

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
3 ROUND SS 5/16 304 (R) RSS-516 5773 1 X 12' R/L LINE#2 Heat : 1711046	3.12	12.00	PL_\$CLB		1X 12'1"		12				DAS 11 2889
4 ROUND SS 1/2 304 (R) RSS-12 5730 12 X 12' R/L LINE#3 Heat : 1712154	96.05	144.00	PL_\$CLB		8x13'2" 2x13'3" 2x13'1"		144				DAS 11 2889

NIR : R-109516-6

Next Page...



DELIVERY - CLIENT

CO00090245

ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Page

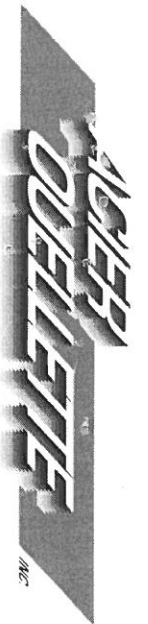
3

Customer N° CL10001056
Date 2018/05/17
Delivery date 2018/05/24
Your order N°
Processed by Eric Kaehliert
Salesman
Carrier OUELLETTE VALLEYFIELD
Credit Terme Net 30 Days

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
5 ROUND 4140 ANNEALED 1 5/8 (R) R4140-158A 4915 1 X 20' R/L LINE#5	141.02	20.00	PI_\$CLB		15' 11"		20'				DAS 11 9-89 MAY 24 2018
6 SHEET 4130 .080-RANDOM NS FE4130-080 10431 1 X 3 X 6' LINE#12 Heat : NLPV4037	33.01	18.00	PI2_\$CLB		14' 3X6'		to be delivered Friday 18 P.M.				DAS 11 9-89 MAY 24 2018

NIR : R-109516-6

Next Page...



DELIVERY - CLIENT

CO00090245

ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

CL10001056

Date

2018/05/17

Delivery date

2018/05/24

Your order N°

Processed by

Eric Kaehlert

Salesman

OUELLETTE VALLEYFIELD

Carrier

Net 30 Days

Credit Terme

4

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Page

4

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
7 ROUND STRESSPROOF 1/2 (R) RST-12 5795 1 X 20" R/L 2X12" LINE#9 Heat : 20504590	13.36	20.00	PL \$CLB		27		24				MAY 24 2018 DAS 11 9-89

Total Weight (lbs) : 305.69

NIR : R-109516-6

Conditions :

All sold and delivered materials remain the property of "Acier Ouellette Inc" until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By :

Verified By :

Delivered By :

Time

Customer's Signature

Date

Total (\$CAD)

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NS.080
 DATE: MAY 24 2018

PO / BATCH NO.: 039927/5075399

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 18 P¹²
 QUANTITY INSPECTED: 18 P¹²
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .080
 THICKNESS RECEIVED: .080
 SHEET SIZE ORDERED: 3x6
 SHEET SIZE RECEIVED: 3x6

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
CORROSION	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	Am 56350
CORRECT THICKNESS	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	Heat # NCPu 4037
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____
DATE: <u>11 MAY 24 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



PURCHASE - AISI 4130N STEEL SHEET
PER ONE THE FOLLOWING
SPEC'S: MIL-8-18729, AMS 6350
OR AMS 6351

RELEASED
01.05.10

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

To: ACIER OUELLETTE

BM#: 170334

PCS: 2

LBS:

Descrp: .080" CF ALLOY 4130 AQ ANN 36" X 72"

MEMO: AMS-6350 HT# NLP4037



METALLURGICAL TESTING LABORATORY
15 ROEMER BLVD.
FARRELL, PA 16121
CONTACT: DALE SIDDONS
TELEPHONE: (724) 983-6464 X1298
FAX: (724) 982-4423

CERTIFIED MILL TEST REPORT

Customer: _____ ORDER # 405904-01 CUST. PO# 918238
Address: 123 NORTH 8TH STREET SIZE .080 X 36.000
KENILWORTH, NJ 07033 WT. SHIPPED 34960
HEAT # NLP4037
Phone: 908-497-1480 GRADE/TYPE 4130AQ (Spherodized Annealed) CR
Fax: 908-497-1480 Testing Required: AMS6350N/6351K, ASTM505/506/EN 10204 3.1
Representative: ED HALPN AMS2252D/2301K / (MILS-s-18729)

As Processed Results											
ASTM TEST METHOD				E8			E18	E290	E45	E112	E1077
Coil #	Heat #	Gauge	Area	Yield PSI	Ultimate PSI	Elong 2%	Hardness HRBW	Bend Test 1/2T-HW	E-45 Rating 100X	Grain Size 100X	Decarb 100X
7960582	NLP4037	.080	.0400	50710	73950	27	80	PASS	0	8	0

Heat Treated Results*					
ASTM TEST METHOD					
Coil #	Heat #	Gauge	Hardness HRC		
7960582	NLP4037	.080	37		

*Denotes outsourced to independent laboratory (A2LA Accredited)

Hardness Test Per ASTM E-18	
	Average
Surface (HRA)	78.1
Core (HRA)	78.5

Requirement: The difference in hardness between the surface and core shall not be greater than 2.0

CONFORMANCE: The sample submitted has passed all testing requirements.

By: _____

Metallurgical Laboratory Supervisor

Date: 6-8-17

Date: 6/9/17
Approved By: *M. Las*
Certification Specialist
Benedict-Miller, LLC

The information in this report is derived exclusively from material tested and the information and/or specifications furnished to NLMP Pennsylvania by the customer and excludes any expressed or implied warranties as to the fitness of the material tested or analyzed for any particular use.
This report is the confidential property of NLMP Pennsylvania's customer and shall not be reproduced except in full, without written approval of NLMP Pennsylvania.

To: ACIER OUELLETTE

BM#: 170334

PCS: 2

Descrp: .080" CF ALLOY 4130 AQ ANN 36" X 72"

LBS:

MEMO: AMS-6350 HT# NLPU4037



METALLURGICAL TESTING LABORATORY
15 ROEMER BLVD.
FARRELL, PA 16121
CONTACT: DALE SIDDON
TELEPHONE: (724) 983-6464 X1298
FAX: (724) 982-4423

CERTIFIED TEST REPORT

Address: 123 NORTH 8TH STREET
KENILWORTH, NJ 07033

Phone: 908-497-1477
Fax: 908-497-1480
Representative: ED HALPIN

ORDER # 405904-01 CUST. PO# 918238
SIZE .080 X 36.000
WT SHIPPED 34980
HEAT # NLPU4037
GRADE 4130AQ

Heat Analysis # NLPU4037									
ASTM TEST METHOD: E415 <input type="checkbox"/> or E1019 <input type="checkbox"/> (C & S only when checked)									
(Results are in weight %)									
C	Mn	P	S	Al	Si	Cu	Ni	Cr	Mo
.30	.45	.01	.002	.036	.2	.15	.06	.84	.15
Sn	Ca	B	Nb	Co	V	Zr	Ce	N	Ti

NOTE: MELT AND MFG IN THE USA

- The material supplied is mercury and weld free
- Frequency/severity rating = passed based on Frequency/severity per spec AMS 2301K (F); 0 / (S); 0

Date: 6/9/17
Approved By: *MJas*
Certification Specialist
Benedict-Miller, LLC

By:

Dale F. Sidon
Metallurgical Laboratory Supervisor

Date:

6-8-17

The information in this report is derived exclusively from material tested and the information and/or specifications furnished to NLMK Pennsylvania by the customer and excludes any expressed or implied warranties as to the fitness of the material tested or analyzed for any particular use.
This report is the confidential property of NLMK Pennsylvania's customer and shall not be reproduced except in full, without written approval of NLMK Pennsylvania.

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-1144-R0.500
 DATE: MAY 24 2018

PO / BATCH NO.: 039927/5074043

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24
 QUANTITY INSPECTED: 24
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.500
 THICKNESS RECEIVED: 0.500
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	(N)	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	(N)	
CORRECT MATERIAL PER M-DRAWING	(Y)	(N)	Astm A311
CORRECT THICKNESS	(Y)	(N)	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	(N)	Heat # 20504590
CORRECT MATERIAL IDENTIFICATION	(Y)	(N)	
CORRECT M# ON THE MATERIAL	(Y)	(N)	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89 MAY 24 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.08.09	VM	WM

247.09.12
W

PURCHASE MATERIAL : AISI 1144 STRESSPROOF STEEL ROUND BAR
SPECIFICATION: ASTM A311 or UNS G11440
PART NUMBER: MT-1144-R [D.DDD]
WHERE "D.DDD" = DIAMETER IN INCHES
EG. 5/8" ROUND BAR = MT-1144-R0.625



TITLE AISI 1144 STRESSPROOF STEEL
ROUND BAR

REV **REV**

NO.	DATE	BY	CHKD	DESCRIPTION
1	08/03/2017	WM	WM	FRACTIONS = 16
2	08/03/2017	WM	WM	ANGLES & R
3	08/03/2017	SAC	WM	INCHES = 16
4	08/03/2017	CHES	WM	1 DIMENSIONAL ANGLES SPECIFIED
5	08/03/2017	MGL	WM	UNLESS OTHERWISE SPECIFIED
6	08/03/2017	PD	WM	2. ADJUST THE ANGLES
7	08/03/2017	QA	WM	APPROVED
8	08/03/2017	WM	WM	3. DIMENSIONAL LIMITS APPLY

DATE: 8/31/2017 **SCALE:** 1" = 1" **SHEET** 1 OF 1

5795

RST-12

48872
#9678
**NIAGARA
LASALLE**
CORPORATION

 1412 160th Street
Hammond IN 46327-1799

CERTIFICATION

CERTIFICATE	Rev
H180769	2
DATE	
08/11/17	
PAGE	
2	

S H I P T O	PURCHASE ORDER	B99740
	ORDER	943870-1
	CUSTOMER ITEM	V715371
	ITEM	110500132SP4
	GRADE	STRESSPROOF(R)
	SHAPE	Round
	SIZE	.5600
	SIZE MM	12.7000 MM
	LENGTH	11' 0"/12' 6"
	LENGTH MM	3352.8 / 3810

STRESSPROOF(R) Spec/Rev: Spec/Rev: ASTM A108-13 Spec/Rev: ASTM A29/A29M-15 Spec/Rev: ASTM A311-04(2010) CLASS B

HEAT	GRAIN PRACTICE	SOURCE / MELTED	CAST	REDUCTION RATIO	DI
20504590	COARSE	CHARTER STEEL - OHIO (USA)	STRAND	249.5:1	1.99
CHEMISTRY					
C	MN	P	S	SI	NI
0.410	1.380	.013	.279	0.180	0.050
CR	MO	CU	AL	V	
0.100	.020	.150	.001	.002	
N	TE	AS	PB	SE	BI
.007	N/A	N/A	N/A	.008	N/A
MECHANICAL					
JOB	TENSILE	.2% YIELD	ELONG	R OF A	HARDNESS
HS45598	131,930 PSI	103,107 PSI	14.10	35.80	HRC = 26
LOT					
LOT	JOB	WEIGHT (LBS)	PIECES	LOT	JOB
5484326	HS45598	3,830	459		

WE, hereby certify that these goods were produced in compliance with all applicable requirements of sections 6, 7, and 12 of the Fair Labor Standards Act, as amended, and all regulations and orders of the United States Department of Labor issued under section 14 thereof. Material was not exposed to mercury or any metal alloy that is liquid at ambient temperature during processing or while in our possession. No weld repairs performed on the above material.

CERTIFICATE OF TEST

By:

Walter P. Kretzler - Director of Q.A./Chief Metallurgist

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-9140-R1.625
 DATE: MAY 24 2018

PO / BATCH NO.: 038927/5074042

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 20'
 QUANTITY INSPECTED: 20'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.625
 THICKNESS RECEIVED: 1.625
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORROSION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<u>Asm A-29</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<u>Heat #166873</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAY 24 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 ROUND BAR
MINIMUM ROCKWELL C = 20 Rc
MAXIMUM ROCKWELL C = 38 Rc

SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529

PART NUMBER: MT-4140-R-ID.DDD]
WHERE "D.DDD" = DIAMETER IN INCHES
EX. 4" ROUND BAR = MT-4140-R-4.000

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML

DART AEROSPACE		Newbury, Ontario, Canada	
TITLE AISI 4140 ROUND BAR			
PART NO.	REV	A	
MT-4140-R			
TOOL NO.			
DESIGNED BY: VM 17/12/13			
DRAWN BY: VM 12/13/2017			
CHECKED BY: ML 12/19/2017			
INFO REVIEW BY: DP 12/20/2017			
APPROVED BY: ML 12/20/2017			
SCALE: NTS			
SHEET 1 OF 1			
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CERTIFIED MILL TEST REPORT

Alton Steel Test Lab
45 CV Street
Alton, IL 62002-9111
(618) 463-4492 EXT 7486
(618) 463-4491 (Fax)

BILL TO		SHIP TO	
Eaton Steel Corporation 10221 Capital Avenue Oak Park, IL 48337		Eaton Steel Corporation 10221 Capital Avenue Oak Park, IL 48337	
Date	11/16/2015	Customer PO	136074
ASI Ord No.	92098	Customer P/L	9701
ASI Ord Line Item	1		
Item Description	ASTM A 30-12, ASTM A 322-07		
Spec Bar	S16-40		
Heat Number	166873		
Heat Number	166873		
CHEMICAL ANALYSIS TEST METHODS ASTM E-415 & E-1019			
Heat Number	166873		
C	0.41	Mn	0.89
P	0.028	S	0.024
Si	0.26	Cu	0.20
Ni	0.081	Cr	0.856
Mo	0.010	Al	0.003
Nb/Cb	0.003	V	0.023
B	0.0003	Ti	0.0030
N	0.0102	C	0.056
JOINTLY HARDENABILITY USING ASTM A-355 CALCULATED FROM CHEMICAL DT			
GS	D1	31	32
7	4.86	33	34
35	36	37	38
39	40	41	42
43	44	45	46
47	48	49	50
51	52	53	54
SPECIAL TEST RESULTS			
ASTM E-45 Method A:			
TA	TB	TC	TD
HA	HB	HC	HD
SE	SO	SI	SD
SC	SS	ST	ST
ASTM E-45 Method C:	SC	SC	SC
ASTM E-381	Charpy	Hardness	
RC	RB	RD	RE
ADDITIONAL COMMENTS			
Attention or reproduction of this report, except in full, is not allowed without written approval by a representative of Alton Steel Corporation.			
I hereby certify that the above tests are correct as conducted in the records of ALTON STEEL CORPORATION.			
Quality Leader: Josh Lyon			
This _____ Day of _____			
My commission expires _____			
(NDAV Public)			

Super Steel Treating
6227 Rink Ave
Warren MI 48091
(586) 755-9140
ISO 9001:2008 Registered



Quality Report

Date	Q.C. ID No.
12/14/16	WOBRI46765

Customer: EATON STEEL CORP

Metallurgist: AJR

Metallurgical Certification

Customer: EATON STEEL CORP PLTW2
Grade: 4140
Size: 1.6250
Heat No: 166873
Receiver: BRI46765
Cust PO: 159621
Mill Notes:
Our Part: EATO5622
Cust Part: 7317

WOBRI 809612

Furnace Process: 1
Date Processed: 12/14/16
Accepted Weight: 23480
Accepted Qty: 3
Mill: EATON
Release No:
Process TY: LPA

Representative Sampling

Sample	Coil ID#	Decarb	FF	HB	HRC	HB	HRB	HRC	HB	Microstructure
159226		0.005		205						100% PEARLITE

Coil/Bundle ID: R166873001 R166873002 R166873003

cert 411029

EN 10204:2004-3.1

Eaton Steel Bar Company Inspection Certificate 1640568

Customer	BOL	Ship Date	Customer PO	Item	Customer Item	Item Description
	210780	08-May-2017	899087	7317 rev 002	001-0021-12	1-5/8 HR RD 4140ME 18/20II SBQ LPA FG MST

All bundles listed below were produced using steel from Heat 166873 Issued by ALTON STEEL and were completed from Eaton Steel Job 809612.

Chemistry	Description	Value	Units	Heat Treating	Description	Value	Units
C	Carbon	0.41000	PMGT	AUSTENITIZING-HT	Austenitize Temp in Fahrenheit	1600 - 1700	DEGF
Mn	Manganese	0.09000	PMGT	MAGNETISM-HT	Magnetism in Gauss	0 - 20	GN
P	Phosphorus	0.00800	PMGT	HT-NT	Machine Straighten	Satisfactory	
S	Sulfur	0.02400	PMGT	TIME AT TEMP	Time at Temperature	Report	
Si	Silicon	0.26000	PMGT	MILL PROCESSING	Description	Value	Units
Ni	Nickel	0.08100	PMGT	MELT COUNTRY	Melted in Country	USA	
Cr	Chromium	0.05600	PMGT	ROLLED COUNTRY	Rolled in Country	USA	
Mo	Molybdenum	0.15000	PMGT	RED RATIO	Reduction Ratio	23.63	RED
Al	Aluminum	0.00300	PMGT	ASTM Standard	Description	Value	Units
Cu	Copper	0.20000	PMGT	A322-91	Steel Bars, Alloy, Standard Grades	CONFORMS	
V	Vanadium	0.02300	PMGT	STRUCTURE	Description	Value	Units
Co	Cobaltium	0.00300	PMGT	PERCENT LP	Percent Laminar Pearlite	70 - 100	PCT
Ca	Calcium	0.00560	PMGT	MICROSTRUCTURE	Reported Microstructure	LP	
N	Nitrogen	0.01020	PMGT	Tag Number	Qty/Units	Length	
DI	Ideal Diameter	4.86000	IN	022-199377	2275 LBS	10ft	

Cleanliness	Description	Value	Units
MACRO ETCH	Report macro etch results.		

Geometry	Description	Value	Units
DIAMETER	Diameter	1.6094 - 1.6406	IN

Geometry	Description	Value	Units
JOMINY	Jominy		
J1	1/16 inch from Quenched End	56	HRC
J2	2/16 inch from Quenched End	56	HRC
J3	3/16 inch from Quenched End	56	HRC
J4	4/16 inch from Quenched End	56	HRC
J5	5/16 inch from Quenched End	55	HRC
J6	6/16 inch from Quenched End	53	HRC
J7	7/16 inch from Quenched End	52	HRC
J8	8/16 inch from Quenched End	51	HRC
J9	9/16 inch from Quenched End	50	HRC
J10	10/16 inch from Quenched End	47	HRC
J12	12/16 inch from Quenched End	45	HRC
J14	14/16 inch from Quenched End	42	HRC
J16	16/16 inch from Quenched End	41	HRC
J18	18/16 inch from Quenched End	41	HRC
J20	20/16 inch from Quenched End		HRC
J22	22/16 inch from Quenched End	39	HRC
J24	24/16 inch from Quenched End	36	HRC
J28	28/16 inch from Quenched End	34	HRC
J32	32/16 inch from Quenched End		HRC

Mechanical	Description	Value	Units
BRINELL MID	Brinell Mid Radius	205.0	BRN

Brinell tags with Eaton Steel Identifiers reference the steel grade, heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-00002 Rev 0 dated 11/2/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 08-May-2017
 Thomas Snabes, Corporate Metallurgist

This document was prepared by means of electronic data processing and is valid without signature.

10221 Capital Avenue, Oak Park, MI 48237 USA
 Tel: 248-398-3434
 Fax: 248-398-1434
 http://www.eatonsteel.com

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304R.500
DATE: MAY 24 2018

PO / BATCH NO.: 039927/5074041

MATERIAL CERT REC'D: YES
QUANTITY RECEIVED: 144'
QUANTITY INSPECTED: 144'
QUANTITY REJECTED: 0

THICKNESS ORDERED: .500
THICKNESS RECEIVED: .500
SHEET SIZE ORDERED: N/A
SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	Attn A276
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT REF # TO LINK CERT	Y	N	Heat # 1712154
CORRECT MATERIAL IDENTIFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAY 24 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR
(NOTE: AISI 303 NOT ACCEPTABLE)

SPECIFICATION: ASTM A276

PART NUMBER: M304R0.750 DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

RELEASED
2016/08/25/144

B	REFORMAT DWG. ADD SPECS (ZN D6-1).	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	ASS		
DRAWN	97		
CHECKED	5		
MFG. APPR.	M304R		
APPROVED	10		
DE APPR.	10		
DATE	09.07.15		
DART AEROSPACE LTD			
HAWKESBURY, ONTARIO, CANADA			
DRAWING NO.			
M304R			
TITLE			
304/316 ROUND BAR			
SCALE			
NTS			
COPYRIGHT © 2008 BY DART AEROSPACE LTD			
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5730



CHANDAN STEEL LIMITED

(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001 : 2005 CERTIFICATE No. 01 100 011022

ADM. OFFICE: 904, SUSHI SAGAR, N. S. PATKAR MARG, MUNDAI 400 007, INDIA

Tel.: 91-22- 60290600. Fax: 91-22-66290633/74

Website : www.chandansteel.net

Email : csl@chandansteel.net

I/c. No.:

I/c. Date:

WORKS: PLOT NO. 31 TO 36, 45, 46, 48, & 49/2, 142

(EXP. AREA) GIDC, UMBERGAON & SURVEY NO. 102/2 & 3, VILLAGE,

DEHARI, TALUKA: UMBERGAON, DIST: VALSAD, GUJARAT - 396171

GSTIN - 24AAACC9713B1ZC

F824 QC 09A / 02 / 10.12.2012

MILL TEST / INSPECTION CERTIFICATE 3.1

ACCORDING TO EN 10204 : 2005

Consignee						Test Certificate No. : EXP/01152 - 08/2017-2018					
						Date of Issue : 03.01.2018					
						P. O. No. : MN5942					
						SC_No. & Date : 17-18/00447, Dt. 08.11.2017					
						Invoice No. & Date : EXP/01152/2017-18 Dt. 03.01.2018					
PRODUCT DESCRIPTION STAINLESS STEEL ROUND BARS						LENGTH		Net Wt.			
						Ordered	Actual				
						12' - 14'	12' - 14'	4680 Lbs.			
Heat No.	Grade AISI	Size mm/inches	Tolerance		Process Route						
1712154	304L	1/2"	h9		Electric Melting, A.O.D. Refining, Continuous Casting						
CHEMICAL COMPOSITION (Weight %)											
	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N
Min.	-	-	-	-	-	18.00	-	8.00	-	-	-
Max.	0.030	1.00	2.00	0.045	0.030	20.00	-	12.00	-	-	-
Results	0.028	0.33	1.56	0.038	0.008	18.02	-	8.02	-	-	-
MECHANICAL PROPERTIES											
Specified	Yield Strength		Tensile Strength		Elongation		Reduction of Area		Hardness		
Value	N/mm ² /MPa (Rp0.2)		N/mm ² /MPa (Rm)		%		%		(HB)		
Min.	310		620		30		40		-		
Max.	-		-		-		-		-		
Results	534		737		38		65		229-232		
Remarks:											
1. Cold drawn & Centreless Ground.						2. Solution annealed at 1050 °C.					
3. PMI test done 100% & found Satisfactory.											
4. Material is free from radio-active contamination.											
5. Inter-Granular Corrosion Test as per ASTM A262 - 15 (Pr.E) satisfactory.											
6. The material conforms to ASTM A276-15/A182-15/A479-15 & ASME SA479-13 Specifications.											
7. Location of sample - Centre, Direction - Longitudinal, Test Temp - Room Temp., Shape of Test Piece - Round.											
8. Marking details - Company Logo, Size, Grade & Heat No.											
9. The material is manufactured /melt in Chandan Steel Mill and is of Indian Origin.											
10. No welding/weld repairs was performed on this material.											
BUNDLE NO.: 32, 33, 35 & 36											

It is hereby certified that the above results are true and correct in every details and are meeting the requirements of specification & purchase order.

Page 8 of 26

B. S. RAUTELA
MANAGER - QUALITY ASSURANCE



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304R.313
 DATE: MAY 24 2018

PO / BATCH NO.: 039927/8074040

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 12'
 QUANTITY INSPECTED: 12'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .313
 THICKNESS RECEIVED: .313
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	Astm A276
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # 1711046
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-89</u> <u>MAY 24 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR
(NOTE: AISI 303 NOT ACCEPTABLE)

SPECIFICATION: ASTM A276

PART NUMBER: M304R0.750 DIA.

WHERE "D DIA" = DIAMETER IN INCHES
EG. 0.75" ROUND BAR = M304R0.750

RELEASED
11/28/25

B	REFORMAT DWG. ADD SPECS (ZN D6-1).	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	ASS		
DRAWN	GA		
CHECKED	GA		
MFG. APPR.	ASS		
APPROVED	ASS		
DE APPR.	ASS		
DATE	09.07.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304R			
TITLE 304/316 ROUND BAR			
SCALE NTS			
SHEET 1 OF 1			
REV. B			
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5773



RSS-516

CHANDAN STEEL LIMITED

(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

50780

15622

ISO 9001:2008 CERTIFICATE No. 0410001022

ADM. OFFICE: SOL. SUDH SAGAR, N. S. PATKAR MARG, MIDC INDUSTRIAL ESTATE, INDIA

Tel: 91-22-66290600 Fax: 91-22-66290633/34

Website: www.chandansteel.net

Email: csl@chandansteel.net

WORKS: PLOT NO. 31 TO 36, 45, 46, 48, & 49/2, 142

(EXP. AREA) GIDC, UMBERGAON & SURVEY NO. 102/2 & 3, VILLAGE,

DEHARI, TALUKA: UMBERGAON, DIST: VALSAD, GUJARAT - 396171

GSTIN - 24AAACC4713612G

I/c. No.:

I/c. Date:

F824 QC 09A / 02 / 10.12.2012

MILL TEST / INSPECTION CERTIFICATE 3.1

ACCORDING TO EN 10204 : 2005

Consignee				Test Certificate No. : EXP/01209 - 02/2017-2018 Date of Issue : 24.01.2018 P. O. No. : BN5943 SC_No. & Date : 17-18/00448, Dt.18.11.2017 Invoice No. & Date : EXP/01209/2017-18 Dt.24.01.2018							
PRODUCT DESCRIPTION STAINLESS STEEL ROUND BARS				LENGTH				Net Wt.			
				Ordered		Actual		4065 Lbs.			
				12' - 14'		12' - 14'					
Heat No.	Grade	Size	Tolerance	Process Route							
1711046	AISI 304L	5/16"	h9	Electric Melting, A.O.D. Refining, Continuous Casting							
CHEMICAL COMPOSITION (Weight %)											
	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N
Min.	-	-	-	-	-	18.00	-	8.00	-	-	-
Max.	0.030	1.00	2.00	0.045	0.030	20.00	-	12.00	-	-	-
Results	0.026	0.38	1.56	0.041	0.014	18.35	-	8.09	-	-	-
MECHANICAL PROPERTIES											
Specified	Yield Strength		Tensile Strength		Elongation		Reduction of Area		Hardness		
Value	N/mm ² /MPa (Rp0.2)		N/mm ² /MPa (Rm)		%		%		(HB)		
Min.	310		620		30		40		-		
Max.	-		-		-		-		-		
Results	610		790		35		65		242-245		
Remarks:											
1. Cold drawn & Centreless Ground. 2. Solution annealed at 1050 °C. 3. PMI test done 100% & found Satisfactory. 4. Material is free from radio-active contamination. 5. Inter-Granular Corrosion Test as per ASTM A262 - 15 (Pr.E) satisfactory. 6. The material conforms to ASTM A276-15/A182-15/A479-15 & ASME SA479-13 Specifications. 7. Location of sample - Centre, Direction - Longitudinal, Test Temp - Room Temp., Shape of Test Piece - Round. 8. Marking details - Company Logo, Size, Grade & Heat No. 9. The material is manufactured/melt in Chandan Steel Mill and is of Indian Origin. 10. No welding/weld repairs was performed on this material.											
BUNDLE NO.: 2, 3 & 4											



B. S. RAUTELA

MANAGER - QUALITY ASSURANCE

It is hereby certified that the above results are true and correct in every details and are meeting the requirements of specification & purchase order.

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M1018RO.187
 DATE: MAY 24 2018

PO / BATCH NO.: 039927/5074039

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 12'
 QUANTITY INSPECTED: 12'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.187
 THICKNESS RECEIVED: 0.187
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>(N)</u>	
CORRECT FINISH	<u>(Y)</u> N	
CORROSION	Y <u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u> N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u> N	<u>Astm A108</u>
CORRECT THICKNESS	<u>(Y)</u> N	
PHOTO REQUIRED	Y <u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u> N	<u>Heat # A33073-5.5</u>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u> N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-89 MAY 24 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR
SPECIFICATION: MIL-S-7097 OR ASTM A108
PART NUMBER: M1018-RD.DDD WHERE D'DDD = DIAMETER IN INCHES
DIA.

EG. 7/8" ROUND BAR = M1018-R0.875

TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE TOLERANCE
UP TO 1.5" INCL. +0.000/-0.002
OVER 1.5" TO 2.5" INCL. +0.000/-0.003
OVER 2.5" TO 4.0" INCL. +0.000/-0.004
OVER 4.0" TO 6.0" INCL. +0.000/-0.005
OVER 6.0" TO 8.0" INCL. +0.000/-0.006

RELEASED
08 2012-09-24

B	REFORMAT. ADD ASTM A108, ADD TOLERANCES	CP	12.09.05
A	NEW ISSUE	DS	01.06.12
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	CP		
CHECKED	DS		
MFG. APPR.	DS		
APPROVED	DS		
DE APPR.	DS		
DATE	12.09.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M1018-R			
REV. B SHEET 1 OF 1			
TITLE 1018-1025 ROUND BAR			
SCALE NTS			
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5327

RCR-316

50219

14019



INDWISCO LIMITED
1-9010 KEELE ST
CONCORD, ONTARIO
CANADA L4K 2N2

Order number: 67461-1
 Account: 432
 Printed: Jan 09, 2018
 Page: 1

Material Test Report

Bill to	Ship to
---------	---------

Order Details

P.O.: B39410	Ordered: Dec 15, 2017	Due: Jan 12, 2018	Shipped: Dec 15, 2017
Taken by: JENNINE		Christine	

Items Ordered

Grade	Dia	Format	Heat Number(s)	Description
C1018	0.1870	CUT LENGTHS	A33093-5.5	Material: C1018 Diameter: 0.1870 Tol: +/-0.0 Pieces: 1782 @ 144.0000 145
C1018	0.2500	CUT LENGTHS	A32988-7.0	Material: C1018 Diameter: 0.2500 Tol: +/-0.0 Pieces: 4984 @ 144.0000 444
C1018	0.3120	CUT LENGTHS	A32418-9.0	Material: C1018 Diameter: 0.3120 Tol: +/-0.0 Pieces: 1600 @ 144.0000 444

Chemical Analysis by Heat Number

Heat number	Carbon	Silicon	Manganese	Phosphorus	Sulphur	Copper	Nickel	Chromium	Molybdenum	Nitrogen	Aluminum
A32418-9.0	0.1700	0.2100	0.6500	0.0080	0.0170	0.2000	0.0700	0.0600	0.0200	0.0090	0.0020
A32988-7.0	0.1600	0.1900	0.7500	0.0090	0.0120	0.1400	0.0600	0.1100	0.0200	0.0070	0.0020
A33093-5.5	0.1600	0.2100	0.6600	0.0160	0.0130	0.2400	0.0700	0.1300	0.0200	0.0070	0.0020

Physical Properties

Grade	Finished Diameter	Heat Number	Rod Diameter	Tensile PSI	Yield PSI	Elongation %	Reduction of Area %	Brinell	Rockwell B
C1018	0.3120	A32418-9.0	0.3540						
C1018	0.2500	A32988-7.0	0.2760						
C1018	0.1870	A33093-5.5	0.2180						

Specifications

Grade	Specifications
C1018	Low carbon Steel ASTM: A29, A108, A510

I hereby certify that the above data is correct as contained in the records of INDWISCO LIMITED.

Date: Jan 9/18

Signature:

Jennine Sams

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6B0.375x1.000

PO / BATCH NO.: 03F927/5074044

DATE: MAY 24 2018

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 40
 QUANTITY INSPECTED: 40
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.375
 THICKNESS RECEIVED: 0.375
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>Astm B221</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>Heat #3B6294</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____
DATE: <u>9-89 MAY 24 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221

PART NUMBER: M6061T6B | T.TTT | X | WW WWW
THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES
"WW.WWWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B1.000X12.000

RELEASED
R 2009-09-03
MD

B	REMOVE QQ-A-250/11 OPTION, REFORMAT NOTES, ADD ASTM B211/B221 (ZN D7-1)	CP	09.07.13
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	DS		
CHECKED	DS		
MFG. APPR.	DS		
APPROVED	DS		
DE APPR.	DS		
DATE	09.07.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B	
DRAWING NO. M6061T6B		SHEET 1 OF 1	
TITLE 6061-T6 BAR		SCALE NTS	
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Material Test Report

Manifest: 326918

Ticket:
5547054

Our Order: 437184 - 1 Cust P.O.: 4500819317
Die: ES05691 Part: 163000029
Alloy Temper: 6061 T6511 Description: .375 x 1.000
Print Date: 7/9/17

Chemical Composition

Maximum

<u>CastNum</u>	<u>Si</u>	<u>Fe</u>	<u>Cu</u>	<u>Mn</u>	<u>Mg</u>	<u>Cr</u>	<u>Zn</u>	<u>Ti</u>	<u>OtherEach</u>	<u>OtherTotal</u>
3B6294	0.61	0.19	0.23	0.04	0.85	0.06	0.01	0.02	0.05	0.15

Mechanical Properties

Strength ksi

<u>Sample ID</u>	<u>Cast #</u>	<u>Lot #</u>	<u>Test Date</u>	<u>Ultimate Tensile</u>	<u>Yield 2% offset</u>	<u>Elongation 2" gage length</u>
427350	3B6294	A11	7/7/17	46.28	40.04	14.4

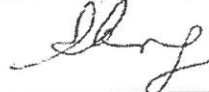
Applicable Specifications: ASTMB221-14 AMS-QQ-A200/8A

Country of Origin: ONTARIO, CANADA

Can Art Aluminum Extrusion Inc. certifies that materials shipped under this order have been inspected and tested in accordance with Aluminum Association and agreed upon customer specifications. Can Art assumes no liability for additional costs which may be incurred during the customer's manufacture and sale of its products, and is subject only to the replacement of any materials not within agreed upon specifications provided written notification is received by Can Art within 30 days from the date of shipment.

Rahul Tiwari - Tensile Testing

Authorized:


Evan Eng, Quality Assurance Manager